LP SENSOR TECHNOLOGY LP-M01 Plus Industrial IoT Digital Input Module User Manual

Contents

LP SENSOR TECHNOLOGY LP-M01 Plus Industrial IoT Digital Input Module

Industrial IoT Digital Input Module

- Directly convert digital hardwired signals into encrypted wireless
- Easy Plug & Play Integration into any control system via Modbus Communications
- High Dependability – Rugged Design for tough environments
- Improved Safety & Data Transfer Reliability
- Overall savings in capital investment cost
- Additional Functional capabilities: remote transfer switch control with LPM02 module

Key Features

Flexible Monitoring Application
Employ hardwired contact inputs from remote devices to the Control house or central PLC location without the need for new cables, digging trenches, or adding conduit. The encrypted communications provide a secure and reliable communication.

Easy Integration
LP-M01 supports the use of a battery as power source to facilitate remote installation location. It expands the availability of monitoring any remote hardwired input contact status via Modbus TCP/RTU in combination with the LP-C01 with any PLC / Automation Controller.

High Dependability
Debounce support in both software and hardware. Communications monitoring will alarm for low battery, interrupted communication, or any device malfunction.
Rugged case suitable for tough environments. Conformal coating on all electronic circuit boards.

Improved Safety & Data Transfer Reliability
Secured and encrypted wireless communications.
Replace control wiring to outside cabinets with wireless antenna, eliminating unnecessary outages or the need to go through existing paths with dangerous voltage levels.

Savings on Capital Cost Investments
Reduce project costs and time using wireless communication instead of traditional wired applications. No trench, conduit, or raceway requirements, less labor for design, documentation, installation, testing and maintenance. Additionally, with the Modbus communication, this device can be used for virtually any application in the automation and control industry.

Transfer Switch System
Create a wireless version of pilot signals for any remote monitoring and control. The transfer switch system at M01+ reads an input and with the M02 module it quickly asserts the designated output to emulate, mirror, or momentary pulse. Inputs and outputs can be designated and configured via LP's configuration software.

Specifications

- **Power Supply**

  10-30VDC, 3 Watts maximum
- **Input Ratings**

  12V DC (internally wetted contacts) 10-30VDC (externally wetted contacts)
- **Battery supply mode**

  12VDC low power mode

  3-year maximum battery life supported
- **Communications**

  Input latency: 100ms

  Wireless communication encryption: AES128 with custom authorization key support.
  - Output Protocol
    - LoRa Based encrypted communication
    - MODBUS TCP & MODBUS RTU (via LP-C01)

      Supported LoRa Wireless Frequencies: 915MHz (US), 868 MHz (EU)
  - Antenna: External
    - Channel: Single (72 Channels selectable) Maximum wireless communication range: 2.5 mile (with 4db Antenna installed)
    - USB Port: USB-C (For settings & firmware update only)
  - Digital Inputs

    8 Total Binary Inputs.
    - 4 internal wetted inputs for dry contacts
    - 4 inputs for any wetted contacts (10-250 VDC)
  - Digital Counter Inputs:
    - Three pulse input for counter
    - 10-250VDC rated
- **Operating Temperature**

  –40°C to +85°C (–40°F to +185°F)
- **Dimensions**

  6.05”L*4.5”W*2.4”H

  154.59(mm)L*83.7(mm)W* 60.96(mm)H
- **Weight**

  405g

Compliance
Designed and manufactured under an ISO 9001 certified quality management system.
Notes:
It is a Class A product, and it may cause interference if used in residential areas. Such use should be avoided unless the user takes special measures to reduce electromagnetic emissions to prevent interference to the reception of radio and television broadcasts.
This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. this device must accept any interference received, including interference that may cause undesired operation

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
The device generally be used in such a way that a separation distance of at least 20 centimeters is normally maintained between the RF source's radiating structure(s) and the body of the user or nearby persons.

SIMPLIFIED EU DECLARATION OF CONFORMITY :
Hereby, LP Sensor Technology declares that the radio equipment type LP-M0 Series Industrial IoT module LP-M01 is in compliance with Directive 2014/53/EU.

Frequency Band:
Uplink: 868.1 MHz, 868.3MHz, 902.5 MHz, 914.9 MHz
Downlink: 868.1 MHz, 868.3MHz, 903 MHz, 914.2 MHz

Contact information
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Documents / Resources

	LP SENSOR TECHNOLOGY LP-M01 Plus Industrial IoT Digital Input Module [pdf] User Manual MIOW001, 2A8PY-MIOW001, 2A8PYMIOW001, LP-M01 Plus Industrial IoT Digital Input Module, LP-M01 Plus, Industrial IoT Digital Input Module, IoT Digital Input Module, Digital Input Module, Input Module, Module

References

- LP Sensor Technology